

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An apparatus for feeding wire at a controllable wire feed speed to a weld comprising:
  - a wire feed motor, having a wire feed speed;
  - a controller, coupled to the wire feed motor;and
  - a selectable wire feed speed input;
  - wherein the controller includes an input circuit coupled to the selectable wire feed speed input, and wherein the input circuit includes a non-linear stage such that the relationship between the selectable wire feed speed input and the wire feed speed is not linear.
2. The apparatus of claim 1 wherein the selectable wire feed speed input includes a potentiometer mounted on a front panel.
3. The apparatus of claim 2 where the input circuit includes a plurality of gain stages each having gain over one of a plurality of input ranges.
4. The apparatus of claim 2 wherein the non-linear stage includes a gain stage having a varying gain.
5. The apparatus of claim 1 wherein the controller directly controls wire feed speed.
6. An apparatus for feeding wire at a controllable wire feed speed to a weld comprising:

a wire feed motor, having a wire feed speed; a controller means for controlling the motor speed, wherein the controller means is coupled to the motor; and

an input means for allowing a user to select a wire feed speed;

wherein the controller means includes an input circuit coupled to the input means, and wherein the input circuit includes non-linear means for creating a non-linear relationship between a setting of the input means and the wire feed speed.

6. The apparatus of claim 5 wherein the input means includes a potentiometer mounted on a front panel.

7. The apparatus of claim 6 where the input circuit includes a gain stage means for providing at least two gains.

8. The apparatus of claim 6 wherein the non-linear means includes a gain stage means for providing a varying gain.

9. A method of controlling wire feeder comprising the steps of:

providing the wire at a controlled speed;

providing a user input; and

creating a non-linear relationship between the user input and the wire feed speed.

10. The method of claim 9 wherein the step of providing a user input includes providing a potentiometer mounted on a front panel.

11. The method of claim 10 where the step of creating includes the step of providing at least two gains in a gain stage connected to the user input.

12. An apparatus for controlling the rate at which wire is fed to a weld, comprising:

a wire feed motor output;

a selectable wire feed speed input; and

an input circuit coupled to the selectable wire feed speed input, and wherein the input circuit includes a non-linear stage such that the relationship between the selectable wire feed speed input and the wire feed output is not linear.

13. The apparatus of claim 12 wherein the selectable wire feed speed input includes a potentiometer mounted on a front panel.

14. The apparatus of claim 13 wherein the input circuit includes a plurality of gain stages each having gain over one of a plurality of input ranges.

15. The apparatus of claim 13 wherein the non-linear stage includes a gain stage having a varying gain.

16. The apparatus of claim 12 wherein the controller directly controls wire feed speed.

17. An apparatus for controlling the rate at which wire is fed to a weld comprising:

a wire feed motor output, corresponding to a wired feed speed;

controller means for controlling the motor speed, wherein the controller means is coupled to the motor output; and

an input means for allowing a user to select a wire feed speed;

wherein the controller means includes an input circuit coupled to the input means, and wherein the input circuit includes non-linear means for creating a non-linear relationship between a setting of the input means and the motor output.

18. The apparatus of claim 17 wherein the input means includes a potentiometer mounted on a front panel.

19. The apparatus of claim 18 where the input circuit includes a gain stage means for providing at least two gains.

20. The apparatus of claim 18 wherein the non-linear means includes a gain stage means for providing a varying gain.

21. An apparatus for arc welding comprising:  
a welding power supply connected to provide welding power to the arc;  
a wire feed motor, disposed to provide wire to the arc and having a wire feed speed;  
a controller, coupled to the wire feed motor;  
and  
a selectable wire feed speed input;  
wherein the controller includes an input circuit coupled to the selectable wire feed speed input, and wherein the input circuit includes a non-linear stage such that the relationship between the selectable wire feed speed input and the wire feed speed is not linear.

22. The apparatus of claim 21 wherein the selectable wire feed speed input includes a potentiometer mounted on a front panel.

23. The apparatus of claim 22 where the input circuit includes a plurality of gain stages each having gain over one of a plurality of input ranges.

24. The apparatus of claim 22 wherein the non-linear stage includes a gain stage having a varying gain.

25. The apparatus of claim 21 wherein the controller directly controls wire feed speed.